1014-03-1551 **Christopher S Hardin*** (chardin@email.smith.edu), Dept of Mathematics, Clark Science Center, 44 College Lane, Smith College, Northampton, MA 01063, and **Alan D Taylor**. *A Peculiar Connection Between the Axiom of Choice and Predicting the Future.* Preliminary report.

We consider the problem of how agents might try to guess values of a function based only on knowledge of the function on a subset of the domain, without any assumptions about the function being analytic or even continuous. At the level of a single agent, this is a hopeless problem. When one considers a collection of agents, however, it is often possible, using the Axiom of Choice, for the agents to guess in such a way that almost all of them are correct.

As an application, we can construct a strategy which, given an arbitrary function f from the reals into some set, will for all but countably many x correctly guess the value of f on an interval $[x, x+\varepsilon)$, $\varepsilon > 0$, given only the value of f on $(-\infty, x)$. If one interprets this function as the evolution of a system over time, this means that, in principle, one can almost always predict an interval of the system's future based only on its past, without any assumption of continuity. (Received September 28, 2005)